SURECHLOR 4500 and HYDROXINATOR

USERS MANUAL

Your Handy Guide To Your New Multi Salt Pool Management System

Poolrite

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Installation

Cell

The Cell must be installed horizontally (within 5° of level), in the return to pool line. The two plumbing ports must pint downwards. The cell must be installed as teh last piece of equipment in teh line (when following the flow of water back to the pool)

Heaters and other pool equipment that are also in the pool return line must be installed before the cell.

Surechlor Power Pack

The Power Pack must be mounted on a vertical wall or fence within 1.5 metres of the cell and at least 1 metre above the ground.

WARNING: Do not mount the Power Pack on a metal fence or shed wall as this will void your warranty

The Power Pack must also be in a position to allow its supply lead to be plugged into a 10 amp 240 volt power point.

Remember the filter pump must be plugged into the Power Pack.

Mounting the Power Pack

Select a suitable place to attach the mounting bracket. Ensure that the location selected is well ventilated (allowing plenty of airfl w behind the unit) and is not in direct sunlight.

Mount the 'Z' bracket horizontally ensuring that the screw holes are on the bottom side of the bracket. Carefully hook the Power Pack onto the mounting bracket.

Plug the lead into a suitable 240 volt power point but DO NOT SWITCH THE UNIT ON.

Connecting the Pool Pump

Plug the pool pump into the socket at the bottom of the power pack.
Note: If a pump load greater than 1.5Kw or the use of a 3 phase pump is required, an interface relay must be installed.

WARNING: Do not use double adaptors or stackable plugs as this will void the warranty.

Off Peak Installations

This unit is suitable for off-peak tariff supply.

General Warnings

The warranty will be void if the Power Pack is:

- Installed or operated on, or less than 1 metre from, the ground
- Placed in a location that can be flooded y storm water or by accidental immersion
- Where the airfl w is obstructed, i.e. Within a poorly ventilated auxiliary enclosure
- Mounted close to, against, or on top of an auxiliary heat source (eg. metal fence/shed wall)
- With a pump connected (via the 240 volt pump outlet socket)which consumes greater than 1.5Kw continuously
- From an electrical supply socket which is not rated to supply 10 amps at 220 – 240 volts 50Hz and is not adequately protected by the correct size fuse or circuit breakers
- Operated on a pool where the calcium concentration in the water is higher than 350 ppm or in a newly installed concrete marble plaster pool where the excess calcium compounds are still leaching

NOTE: Extension leads are not recommended for use with this equipment because they are unsafe in and around the pool zone.

For extended equipment service life and peace of mind, Poolrite recommends that your Surechlor 4500 is serviced regularly on a six monthly basis by a reputable qualified pool professional.

Adding Salt to the Pool:
Start Up Procedure for Marble Surface Pools

"Note: Your Surechlor 4500 has been designed to operate with a variety of mineral salts. Throughout this manual, wherever the words "salt", "salts" or "minerals" are used, they refer to either sodium chloride (so-called "common salt") magnesium chloride, or mixtures thereof which may also include some potassium chloride."

For new concrete pools with marble plaster (marblesheen) finishes we recommend that salt not be added to the pool until the excess calcium compounds in the plaster have leached out and the pH level of the water has stabilised. The recommended stabilising period is **Hand Mixed/Applied Plaster – 12 Weeks** or for **Machine Mixed/Applied Plaster – 24 weeks**. During this period the pool should be sterilised with liquid chlorine.

Calculating Pool Capacity

Swimming pool grade salt (low mineral content sodium chloride) must be added to the pool and allowed to completely dissolve before operating the chlorinator cell. The amount of salt to be added cannot be calculated until the volume of water contained in the pool is determined.

This volume can be obtained by:

- Referring to the pool manufacturer's data (if pre-moulded fib eglass)
- Reading the difference on the water metre before and after fi ling
- By mathematical calculation:

  Water Volume (m^3) = (Surface Area (m^2) X Average Depth (m)) minus the volume occupied by steps, swim-outs, etc.

Calculating Salt to be Added

The amount of salt to be added to the calculated volume of water in the pool depends on the salt concentration selected.

$$\text{Salt Quantity (kg)} = \frac{\text{Water Volume } (m^3) \times \text{Salt Concentration (ppm)}}{1000}$$

For example, if the calculated volume of water in your pool is 60 m^3 (cubic metres) and the minimum salt level of 6000 ppm (parts per million) is required (for cool climates), the amount of salt needed will be:

$$\text{Salt Quantity} = \frac{60 \text{ X } 6000}{1000} = 360 \text{ kg}$$

What Salt Concentration To Use

Although your Surechlor 4500 has been designed to operate within a wide range of salt concentrations and types (e.g. sodium chloride or magnesium chloride) the recommended levels are as follows

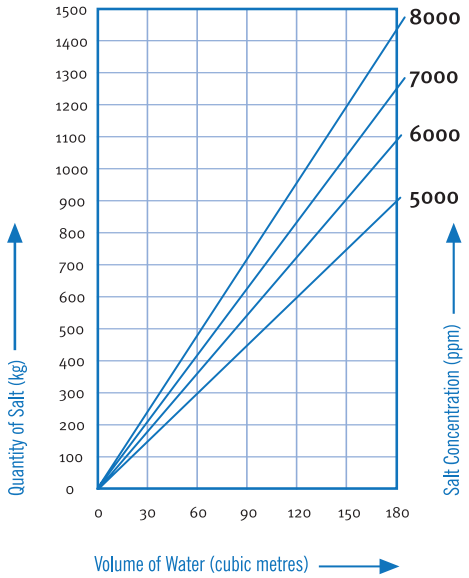
For Mineral salts 3000ppm to 4000ppm.
For Sodium salts 6000ppm to 8000-ppm

However with heated and outdoor pools in tropical and subtropical climates, the higher levels of salt should be maintained in order to gain the benefits of increased chlorine output, reduced cell maintenance and extended cell life.
The Chlorine Control can be switched to 100% output if higher salt levels are used without the risk of damage occurring, due to the incorporation of electronic output limiting on all of these model's chlorinators.

To make the calculation easier, we have provided a chart for calculating the quantity of salt for various sized pools.

To use the chart on the adjacent page:

Instructions
1. Mark the point along the bottom edge which corresponds with the calculated volume of water in the pool
2. Draw a vertical line from this point which intersects the inclined lines showing the salt concentrations
3. From the point where this vertical line intersects the inclined line showing the chosen salt concentration, draw a horizontal line across the left side of the graph
The quantity of salt in kilograms will be indicated



Note:
1 x Cubic Metre
= 1000 litres

If you are quite sure of your calculations then add the calculated amount of salt directly to your pool.

WARNING: Only swimming pool grade salt (Sodium Chloride) should be used. Inferior grades may lead to problems with the chlorinator cell.

- Do not attempt to add salt via the surface skimmer as this can cause damage to the filtration system.
- Any suction type pool cleaners should also be disconnected before adding salt.

At the same time add the recommended quantity of stabiliser. This is most imporant as your ..... 4500 will not operate efficiently during summer months without the correct level of stabiliser in the pool. The recommended level for maximum effi iency is between 30 and 60 ppm. pH buffer can also be added now if required.

Dissolving the Salts

Before attempting to operate the Surechlor 4500, the salt must be allowed to fully dissolve in the pool water. This is best achieved (after allowing sufficient time for the glue on the pipe fittings to set properly) by running the filter pump with the Surechlor 4500 turned off for 24 hours to circulate the water.

Cloudiness and some foaming may be observed in the water until the salts are fully dissolved. To assist the dissolving of the salt regularly brush the floor of the pool with a pool broom until the salt has dissolved. It can take up to 24 hours to fully dissolve the salt.

When the Salt has dissolved

With the pump still operating, increase the Chlorine Control to maximum. The Monitor should indicate full output – 10 triangles. Your Surechlor 4500 is now generating chlorine!
Should the Display read low with the Chlorine Control at maximum, do not be concerned, just allow the pump to run with the Surechlor 4500 turned off for another 24 – 48 hours. If the Display continues to give a low reading after this period, run the Salt Test (with the system running) and note the displayed message.

If the ambient water temperature is approximately 25°C and the cell is relatively clean, this reading will give a rough indication of salt/minerals concentration. If it confirms the salt level is low then add more salt gradually over a period of days until the display reads normal. Continue brushing the floor of the pool until the additional salt has dissolved.

Incompatible Products

The following product are incompatible with your Surechlor 4500 and **MUST NOT BE USED**

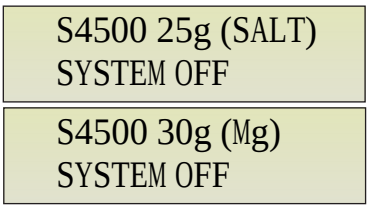
- Metal based algaecides
- Ionisers (copper, silver or combination)

Operation

Operating Modes

The Surechlor 4500 has three distinct operating modes – System Off, Automatic and Manual.

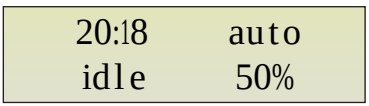
You can cycle through these modes by pressing the **Mode** button.



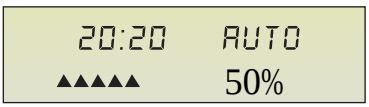
Display when the unit is in System Off mode.

System Off

In the 'System Off' mode, the unit is completely off with the menus and controls disabled. No program times will run in this mode.



Display when the unit is in Automatic mode, but is not chlorinating



Display when the unit is chlorinating

Automatic

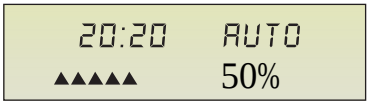
In the 'Automatic' mode, the Surechlor 4500 will operate as normal, chlorinating at the times specified by the Program Time settings. All of the menus and controls will be available in this mode.

Display when the unit is in Manual mode and is chlorinating.

Manual

In the 'Manual' mode, the Surechlor 4500 will start chlorinating immediately, ignoring program times and only stopping when the user cycles back to 'System Off' or 'Automatic' mode.

Sanitiser Control



As your Surechlor 4500 has been designed to operate over a wide range of salt levels, water temperature and running times, the chlorine output of the unit can be varied very easily.

The desired chlorine output is displayed in the bottom right hand corner of the main screen in both the Automatic and Manual operating modes. To adjust this value between 0% and 100% simply press the 'Up' and 'Down' buttons accordingly.

When first starting the unit and where maximum chlorine production is needed the output should be set to maximum.

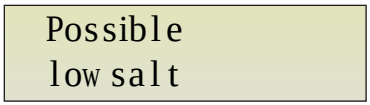
Sanitiser Output Monitor

This display can assist you in determining the condition of the cell, and the salt level in the pool.

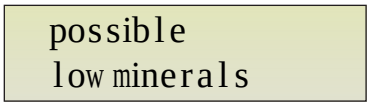
When the unit is chlorinating, it will display a series of triangles in the bottom left of the display as a bar graph with one triangle equal to 10% output.
For example, if 3 triangles were displayed, then the unit is producing 30% of its rated chlorine output.

Menus & Settings

To access the menu on the, simply press the **Menu** button when in the Automatic mode of operation. Pressing the **Menu** button will cycle through the available menu items and pressing the **Enter** button will enter the currently selected menu. To exit the menu repeatedly press the **Menu** button until the main screen re-appears.



Salt OK

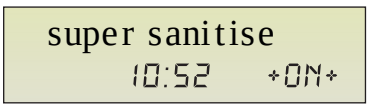


Salt LOW

Salt Test

Entering the salt test menu will have the unit perform an immediate salt test and will display one of two screens indicating the current salt level in the pool.

Display when the user is in the Super Sanitise menu.



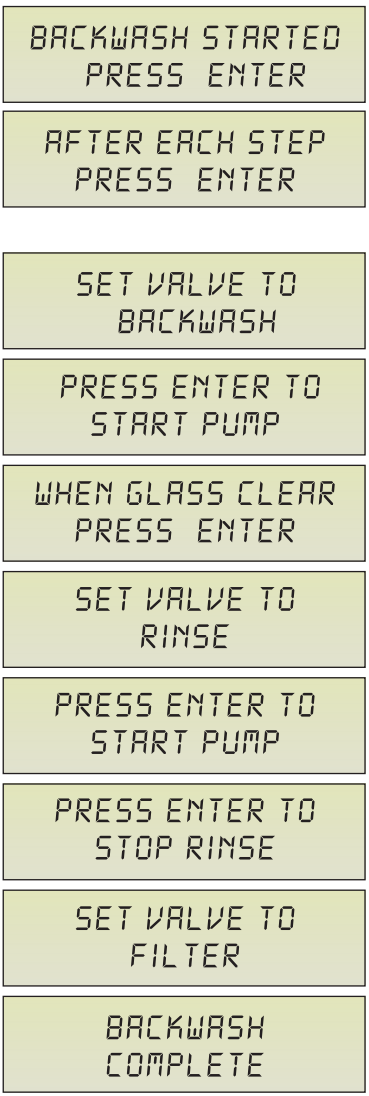
Display when the Super Sanitise feature is activated and in count-down mode with 10 hours and 52 minutes remaining.

Super Sanitise

The Super Sanitise feature on the unit allows you to force the chlorinator to run at maximum output for a 12 hour period.

Pressing the 'Up' button whilst in the Super Sanitise menu will activate the feature, locking the screen and starting the countdown timer. The super sanitise can be disabled by pressing the 'Down' button

Backwash



Entering the Backwash menu will have the unit step you through the backwash process, including the automatic starting and stopping of the pump. Starting a backwash will automatically pause any currently running program. Simply follow the instructions and press **Enter** after completing each step.

1. Set the valve on the top of your fil er to backwash then press **Enter.**
2. After setting the valve, press **Enter** to have the unit start the pump.
3. Wait until the sight glass on the valve becomes clear and then press **Enter** to stop the pump.
4. Set the valve to rinse and then press **Enter.**
5. After setting the valve, press **Enter** to start the pump.
6. After allowing the fil er to rinse for 30 seconds press the **Enter** button to stop.
7. Set the valve back to fil er and press **Enter.**
8. The backwash has been completed.

Winter Mode

The Winter Mode feature on the unit allows the chlorinator to automatically reduce its chlorine output and run-time during the winter months without user intervention. The Winter Mode feature has 3 settings, the reduction amount, the start date and the end date.

The reduction amount can be set to Off, 20% or 40% and dictates the amount that the output is reduced by. The program times will also be automatically reduced by 1 hour when Winter Mode is activated.

To operate the winter mode settings, press the **Menu** button until "WINTER MODE" is displayed, then press **Enter**. Select the chlorine reduction by pressing the 'Up' and 'Down' arrows and then press the **Enter** button.

To Adjust the start and end dates use the 'Up' and 'Down' arrows as required and press **Enter** to proceed to the next screen.

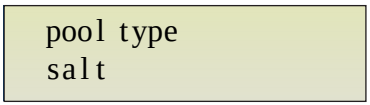
Program Times

The Program Times dictate what time during the day your chlorinator will run. There are 3 program time settings which can be individually enabled or disabled for maximum fl xibility.

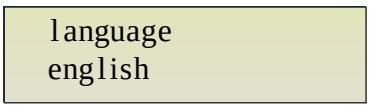
The fi st screen allows you to enable a program by pressing the 'Up' button or disable a program by pressing the 'Down' button. Press the **Enter** button to proceed to the next screen.

Setup

The Setup menu contains several miscellaneous settings.

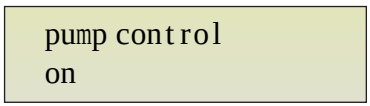


Your first selection will be to enter your pool type (with options for 'Salt' or 'Magnesium'). This function can only be change by a Poolrite authorised professional



You will then be asked to select you language (with options for 'English - French - Spanish - Italian')

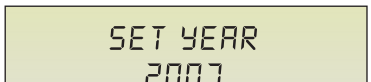
The beeper in the unit can be disabled with this setting.

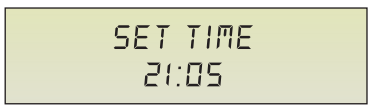


The pump control setting will disable the 240v pump socket when set to OFF

Neva Run Dry™

The Neva Run Dry™ feature ensures that the pump does not continue to run if the cell becomes partially empty.





The system date can be set using the ‘Up’ and ‘Down’ buttons and pressing the enter button to proceed to the next item.

Mains Frequency, Version Number, Model Number and Vendor Telephone

The Mains frequency, Version number, Model number and Vendor telephone number are purely for informational purposes only and cannot be changed by the user.

System History

The number of hours that the unit has run in low salt.

The number of hours that the pump has run with a fully or partially empty cell.

The number of times the pump has been stopped due to the Neva Run Dry™ feature (empty cell).

The number of times the unit has stopped due to an over-current event.

The number of times the unit has stopped due to an over-temperature event.

The number of hours the unit has operated since the last service.

Messages

If the unit has switched off, it will sound an alarm every minute and display the reason, to reset the system press the **Mode** button. Not all alarms will turn off the unit, only those which may cause damage.

Maintenance

Pool Chemistry:
Chemical Balance Guide

Your Surechlor 4500 is designed to be used for swimming pool water, which needs to be balanced in accordance with the "Langlier Saturation Index", with a pH level of 7.0 to 7.8 and maintains the recommended levels of sanitizer (i.e. 2 - 3 ppm of free chlorine).

Regular water analysis and advice on correct addition of chemicals and/or products to achieve suitable water quality and balance by a reputable professional pool shop will ensure bather health and comfort and extended equipment service life.

Please Note: Proof (i.e. hard copy) of regular water analysis by a reputable professional pool shop will be required as evidence of suitable water quality and balance in the event of a warranty claim.

Sanitiser Level

Using a 4-in-1 test kit, test the pool water daily at fi st then at least once a week to ensure suffi ient chlorine level is being maintained. A free chlorine reading of 2ppm and above is adequate when taken near the skimmer.

Should the level fall below 2 ppm check the salt level and / or increase the daily running time.

Health Department regulations require free chlorine levels be kept between 2 - 3 ppm

pH Control

Check the pH of your pool at least once a week after your Surechlor 4500 is first installed. The recommended range for swimming pool water is **7.2 to 7.6** for concrete pools, and you should refer to your builder's recommendations for other types of pools.

Controlling the pH of your pool is vital to the correct operation of the chlorinator, the effectiveness of the chlorine produced and the comfort of the swimmers. Correct pH also effects the life of metals, cement products and plaster fin shes in the pool. If a pH test indicates a low pH then add sodium bicarbonate (pH buffer) to raise the pH. If the pH is high then add acid (hydrochloric or dry acid) to lower the pH.

Total Alkalinity

Check the Total Alkalinity at least once a month and maintain the correct level for proper pool balance. Total Alkalinity is a measure of the acid neutralising capacity of water which indicates its ability to buffer (resist) changes in pH. The addition of sodium bicarbonate will increase the level and acid will reduce it. Measurements can be made with the 4-in-1 test kit. Correct levels depend on other factors such as hardness, pH and temperature, however the following levels, on the next page, can be used as a guide.

Pool Chemistry:
Total Alkalinity cont...

Type of Pool	Total Alkalinity
Concrete Pool	150 - 250 ppm
Vinyl Lined Pool	Above 100 ppm
Fibreglass Pool	80 - 100 ppm max.

Stabiliser

Have a water sample tested at least once a month by your pool shop to determine the level of stabiliser present. It is most important that a level between 30 and 60 ppm be maintained in order for your Surechlor 4500 to work effi iently during the summer months if your pool is outdoors.

Calcium Hardness

Calcium Hardness is a measure of the calcium compounds dissolved in the water. Recommended levels should be as low as practical to minimise problems with calcium deposits forming in the cell. Do not add any further calcium chloride (to raise hardness) or calcium hypochlorite (granular chlorine) to your pool once the decision has been made to install a Surechlor 4500.

WARNING: Water supplies from bores / rivers / dams etc., can be unsuitable for addition to swimming pools as it can be high in mineral contaminants resulting in poor chlorine production, or damage to the electrodes

Algaecides

Adherence to the mentioned water chemistry recommendations should alleviate the need to use algaecides in your pool.

WARNING: If metal based algaecides are used the warranty will be void as they may cause damage to the electrode.

Maintaining Salt / Mineral Levels

Before attempting to add salts/minerals to your pool ensure that the cell is clean. Then, with the filter and cell operating, the "SALT TEST" should be run and the reading on the display noted. If this reading indicates the level of salt/minerlas is too low it must then be increased. This will normally be required about 4 times a year on average domestic pools but will vary depending on the type of filtration, rain fall, pool leaks, etc.

Cell:
Maintenance Frequency

Your Surechlor 4500 has been designed to operate for extended periods with a minimum of maintenance. The cell cleaning function is performed automatically by the unit.

However manual cleaning on a regular six monthly basis will enhance chlorine production and extend equipment service life.

Manual Cell Cleaning Procedure

SAFETY MEASURES: Rubber gloves and protective eyewear must be worn before proceeding with Step 4.

- As an alternative to using the acid solution (Step 4) we recommend the use of a proprietary cell cleaning product available from reputable pool shops and service companies.
- Do not put used acid solution into your pool

1. Remove power pack plug from 240 volt power point.
2. Remove cell from plumbing by undoing the two large knurled coupling nuts on the bottom of the cell housing.
3. Turn cell upside down (inlets facing upwards) and place on a level non-metallic surface in a well ventilated area.
4. Prepare an 10:1 acid cleaning solution by measuring **2 litres of water** into a plastic bucket and then carefully adding **200ml of Hydrochloric Acid**. Stir thoroughly with a wooden stick.
5. Carefully pour sufficient cleaning solution into the upturned cell so as to fully cover the metal electrodes.
6. Allow to stand for 10 minutes then flush out with clean water.
7. If electrodes still show white deposits, repeat the above steps.

It is recommended that a warm water detergent solution be used to soak the electrodes at this point if there is any evidence of body fats, oils or grease.

8. Refit the cell to plumbing line making sure both rubber "O" ring seals are in place.
9. Re-connect the Power Pack plug to 240 volt power point and switch on.

This system is fitted with a backup battery and real time clock. The time will not require resetting.

Common Causes of Premature Cell Failure

To assist you in prolonging the life of your cell, we have provided the following list of common causes of premature cell failure based on our extensive experience in designing, manufacturing and servicing salt water chlorinators. In order to achieve the longest possible life from your Surechlor 4500 Cell, we recommend that the owner bear these important points in mind:

- Operating the cell with too little/too much salt in the water (can often happen after heavy rain)
- Incorrect installation
- Excessive accumulation of calcium deposits on electrodes
- Low water flow through cell (poor fil er maintenance or a faulty pump are typical causes)
- Physical damage to electrode coating caused by scraping with a screwdriver, etc.
- Cleaning of electrodes in too strong an acid solution (greater than 1 part hydrochloric acid in 8 parts water) or acid washing for too long (10 minutes maximum)
- Operating the unit in water over 40^{o}C
- The use of metal based algaecides

Specifications

Electrical Specifications

INPUT: 240V / 50Hz

POWER CONSUMPTION (Max):

15G:	110 VA
25G:	160 VA
35G:	220 VA
45G:	270 VA

OUTPUT (Max):

Pump Socket:

240V / 50Hz

1.5Kw (2.0HP)

8.5A

Cell:

15G:	17.5VDC 6A
25G:	17.5VDC 9A
35G:	17.5VDC 12A
45G:	17.5VDC 15A
70G:	17.5VDC 21A

OVERLOAD PROTECTION

Electric current limiting on cell output (all models)

Replaceable 3.15A slow blow fuse 5x20mm

Approvals

All Poolrite Surechlor 4500 and Hydroxinators have been fully tested and approved to AS/NZS3136.

The Power pack Enclosure is rated as complying with IPX24 as per AS60529 and as such can be legally installed within the designated Pool Zone (Zone 2) as defined in Section 6 of AS/NZS 3000 Wiring Rules.

Poolrite Chlorinator Systems Pty. Ltd. reserves the right to change these specifications without prior notification.

Customer Responsibility

Your "Before You Call for Service" Checklist

Before calling for service read the instructions in this manual carefully.
The following points are your responsibility:

- Power point not turned on or faulty (check with another appliance)
- Time switch incorrectly set
- Surechlor 4500 incorrectly installed
- Pump not plugged into pump outlet socket of teh power pack
- Controls incorrectly set
- Poor water chemistry (salt level, pH etc.)
- Cell not being cleaned (acid wash) properly
- Poor water flow (check filter is clean / pump operating / skimmer free of obstructions)
- Unit being tampered with by unauthorised persons
- If the supply cord is damaged, then it shall be repaired by Poolrite or an authorised service agent.

Please Note: A service charge will be made for service as a result of the above points

Warranty

Surechlor 4500 Salt Water Chlorinator

Poolrite Chlorinator Systems Pty. Ltd. ("Poolrite")

Your Poolrite Surechlor 4500 is manufactured to the highest possible standards using the most up-to-date technology. Accordingly the equipment carries the following Warranty, should a fault occur due to faulty manufacturing or materials.

IMPORTANT: In the event that a fault occurs of a type which is covered by warranty, the purchaser must, in the first instance, contact Poolrite Chlorinator Systems Pty. Ltd. or the closest authorised distributor.
Poolrite warrant to the original purchaser of the Power Pack and electrolytic Cell that should examination disclose to the satisfaction of Poolrite that the Cell or Power Pack, or any parts thereof which are returned freight-paid, have failed due to faulty manufacturing or materials, Poolrite will repair or replace all such faulty parts during the first 36 months after purchase as specified above at no charge, and for a further period of 36 months, at 50% of the recommended retail price.

This Warranty is void if the following occur:

1. Damage resulting from matters beyond Poolrite's control.
2. The Cell or Power Pack has been installed incorrectly and not in accordance with these instructions.
3. The Power Pack has been connected to a power supply other than 240 volt 50Hz.
4. The cell or Power Pack has been used for any purpose other than swimming pool or spa sterilisation.
5. Water above the temperature of 40º or below 5º has been permitted to fl w through the cell.
6. Water has not been permitted to fl w freely through the cell when turned on.
7. The safety fl w detector or connections have been tampered with.
8. The Power Pack has been serviced by a person other than a person authorised to do so by Poolrite or its agent.
9. The Cell power terminals have been submerged in acid solution whilst cleaning.
10. Non-swimming pool grade salt has been used in the pool.
11. Metal based Algaecides have been used.
12. Insect / vermin infestation.
13. Incorrect water chemistry (refer to "Chemical Balance Guide" on page 22)

This Warranty is applicable to workmanship and materials. Poolrite will repair or replace at no charge, all parts returned freight paid, which display faulty workmanship or materials.

Poolrite Chlorination Systems Pty. Ltd. accepts no responsibility for loss, damage or injury to persons or property arising from Warranty failure of equipment, or installation of that equipment. Unless with the express prior authority of Poolrite, any repair or replacement shall be provided only by Poolrite or it's authorised distributors and this Warranty shall not extend to any expenditure otherwise incurred.

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